

**DATE:** June 1, 2005

**TO:** Region Engineers  
Region Delivery Engineers  
TSC Managers  
Resident/Project Engineers  
Region Construction Engineers

**FROM:** Larry E. Tibbits  
Chief Operations Officer

John C. Friend  
Engineer of Delivery

**SUBJECT:** Bureau of Highway Instructional Memorandum 2005-10  
Procedures for Job Mix Formula Adjustments

The Hot Mix Asphalt (HMA) Technical Subcommittee developed this document to promote statewide standardization of Job Mix Formula (JMF) adjustments during HMA production, which takes effect immediately. In order to target the current JMF, a contractor can make changes to the process controls of the HMA plant without requesting an adjustment.

Use the following procedure when a contractor requests a change to the original JMF HMA Field Communication (Form 1911) established during the MDOT mix design verification process.

The process for changing Form 1911 can be initiated more than once during production. However, you cannot submit a subsequent Form 1911 change until the affects on production of the initial change are established.

The contractor must request changes to Form 1911 in writing. The written request can be e-mailed, faxed, mailed, or hand delivered to the project engineer, with a copy to the region mix inspector (RMI). Should the project engineer approve the requested change to Form 1911, the contractor's letter of request must be signed by the project engineer and filed with the project records.

Whenever a JMF adjustment is approved, a new Form 1911 will be created by the RMI. The mix design number on the new Form 1911 will have the original mix design number, followed by the letters "mod" and a number indicating how many modifications have been made to this mix design designation (i.e., 04MD-111mod2). The remarks section must contain a description of the changes since the previously established JMF for that mix.

**Any proposed changes to the existing JMF must adhere to the following procedures:**

1. The contractor may propose a change to the existing JMF based on quality control and/or quality assurance test results.
2. MDOT must verify that any JMF adjustment meets all requirements in the Special Provision for Superpave or Marshall Hot Mix and the contract requirements, such as aggregate wear index. Mixture production must stop if consensus properties do not meet specification.
3. An approved JMF adjustment may be applied retroactively only to the current lot and only for parameters with target values.
4. When the aggregate blend proportions are changed by 10 percent or less from the blend percentages listed on the original mix design, the Bulk Specific Gravity of Aggregate (Gsb) from the mix design will continue to be used for calculating mixture properties.
5. For changes greater than 10 percent, production must stop and the contractor must re-determine the Gsb for the mixture and submit it to the RMI. MDOT region materials personnel will take a sample from the aggregate belt and perform verification testing on the Gsb. If the MDOT sample result verifies the contractor's Gsb within + or - 0.028, the contractor's Gsb will be accepted for the new Form 1911 and production will resume. If the MDOT sample result does not verify the contractor's Gsb, a new mix design will be required for the mixture. The Gsb verification will be completed by MDOT within five business days (includes Saturday).

Changes to the aggregate blend proportions are limited to 20 percent total change from the blend percentages listed on the original mix design. For example, remove 10 percent of aggregate #1 + add 10 percent of aggregate #2 = 20 percent total.

6. Approved Gsb changes will require recalculation of all volumetric properties.
7. Establish the Specific Gravity of Asphalt (Gb) for the asphalt binder grades before the start of production. Unless a change in asphalt binder suppliers occurs, the Gb established on the initial Form 1911 will not change during the course of production. If a Gb change is necessary due to an asphalt binder supplier change, then a change to the existing JMF is required.
8. Adjustments to the effective specific gravity of aggregate (Gse) will require a new mix design. However, if 6 above applies, a new Gse is calculated without requiring a new mix design.

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We will incorporate this information into the *HMA Production Manual* in the annual revision. Please contact John Barak, Supervising Engineer, Bituminous Laboratory, at 517-322-4967 with any questions regarding these procedures.

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Chief Operations Officer

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Engineer of Delivery

BOHD:C/T:JWB:kab

Index: Hot Mix Asphalt

cc: C & T Support Area Staff  
M. DeLong  
M. VanPortfleet  
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